Proposal

Grant and Richmond Flood Damage Mitigation Alternatives Investigation

September 29, 2016

Respectfully submitted by

Amec Foster Wheeler Environment & Infrastructure, Inc.
8745 W Higgins Rd, Suite 300, Chicago IL 60631

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Proposal

Grant and Richmond Flood Damage Mitigation Alternatives Investigation

Amec Foster Wheeler
Environment & Infrastructure, Inc.
8745 W Higgins Rd Suite 300, Chicago IL 60302

List of Proposal Contents

Project Understanding

The Lebeck Park / Grant & Richmond area within the Village of Westmont was deemed one of six "Stormwater Management Areas of Concern" by the Village's Community Stormwater Management Committee in October 2014. Portions of Lebeck Park and the area immediately surrounding the park experience frequent stormwater flooding. This results in the frequent closure of the intersection of Richmond Street and Grant Street due to standing water as well as house and yard flooding. In addition, the flooding impacts the use of Lebeck Park and surrounding sidewalks for extended periods following flood events.

The approximate geographic limits for this study are Quincy Street to the north, Adams Street to the west, Dallas Street to the south and Lincoln Street to the east. The project area includes a local depression which provides unintentional stormwater storage within Lebeck Park and the surrounding area. Stormwater stored within this depression escapes primarily through drainage into the existing storm sewer system draining to the east into Flagg Creek and, to a much lesser degree, as evaporation and infiltration.

The Village of Westmont wishes to have a flood investigation performed that will identify the cause, or causes, of flooding and evaluate alternative solutions to minimize the impact of flooding on both public and private property.

The goals of this planning study are to:

- Analyze the behavior of the existing stormwater management system serving the Lebeck Park / Grant Street and Richmond Street area;
- Define the flooding problems through hydrologic and hydraulic (H&H) modeling along with actual observations/anecdotal information;
- Define what a successful project "looks like", that is, determine which flooding problems should be addressed and define the level of protection to be provided;
- Develop and evaluate alternative solutions that will achieve the Village's definition of a successful project;
- Prepare a report summarizing the alternatives along with their costs.

Project Approach and Scope of Work

The following discussion provides a description of the overall approach to meeting the goals identified in the Project Understanding. Each major task is followed by specific subtasks in an effort to provide sufficient detail regarding the approach and identify relationships to other tasks. The project is divided into the following major tasks:

TASK A: Data Collection
TASK B: Analysis of Existing Conditions
TASK C: Analysis of Alternatives
TASK D: Preparation of Project Report
TASK E: Project Management and Coordination

The project approach and scope of work that follows does not include design, permitting, or construction management/observation services.

TASK A: Data Collection

This task includes the collection and review of data related to the project. Data will be collected through a variety of sources including, but not limited to, the Village of Westmont, DuPage County, area stakeholders and various subconsultants collecting additional field data. Amec Foster Wheeler will coordinate the preparation of data requests with the Village of Westmont. Electronic data will be managed using either ArcGIS or AutoCAD. The following subtasks will be performed:

Subtask A.1

Collect and Review Available Mapping

Mapping data will be acquired from the Village of Westmont (see Item 14 on page 8 under Assumptions & Comments for a detailed summary of requested items). Data will be reviewed and cataloged in a project data library.

Subtask A.2

Collect and Review Sewer Atlases and As-Built Drawings

Storm sewer atlases and as-built drawings for select properties in the vicinity of Lebeck Park will be acquired from the Village. It is Amec Foster Wheeler's understanding that the Village's storm sewer atlas provides pipe connectivity and size information, but does not include rim and invert elevations or pipe shape information. Amec Foster Wheeler will review studies performed by others and as-built drawings to identify additional data needs (field survey to be performed under Subtask A.6). Amec Foster Wheeler will contact the Downers Grove Sanitary District to obtain the sanitary sewer atlas data for the project area.

Subtask A.3

Collect and Review Studies and Associated Hydrologic & Hydraulic (H&H) Models

The following studies will be used as supplemental information when performing the study:

- "Westmont Stormwater Master Plan" by Christopher B. Burke Engineering, Ltd. (CBBEL - 2011)
- "Westmont Green Infrastructure Feasibility Study" by Conservation Design Forum (CDF - 2015)

Complete copies of the studies (including appendices) and electronic copies of the H&H models (including associated mapping and figures) shall be provided by the Village of Westmont. Supporting mapping and supporting H&H calculations/documentation shall also be provided.

Subtask A.4

Collect and Review Historic Flooding Data

The Village shall provide questionnaire data collected after historic flood events affecting the Lebeck Park / Grant & Richmond area (e.g., including, but not limited to, the 2013 and 2011 flood questionnaires/responses). Additional questionnaires will be prepared and distributed by Amec Foster Wheeler if additional input is required from area residents. Any additional information such as drainage complaint records and other anecdotal information collected during flood events shall also be provided by the Village. The Village shall also provide information regarding the specific location(s) of high water marks associated with the April 17-18, 2013 flood event. These locations will be field surveyed under Subtask A.6.

Subtask A.5

Collect Precipitation Data

Local precipitation data for the April 17-18, 2013 flood event will be collected in order to develop the best representation of the spatial and temporal characteristics of the storm. Sources may include the Village of Westmont, neighboring municipalities, the USGS and DuPage County.

Subtask A.6

Collect Supplemental Field Survey Data (subconsultant – SEE ATTACHMENT A)

In order to construct a hydraulic model of the system, detailed survey information must be collected for existing pipes, overland flow routes/swales, and other hydraulic controls. In addition, high water mark data will be collected, where available, based upon information provided by the Village and other stakeholders for specific storm events. Amec Foster Wheeler assumes that much of the data for the existing stormwater management system is already available, such that Subtask A.6 is limited to supplementing the data collected for the studies referenced in Subtask A.3. The following table summarizes potential supplemental survey needs:

Item	Maximum Quantity	Comments
Hydraulic Structures (storm sewer)	50	► Structure type (e.g, manhole, catch basin, inlet, etc.) ► Invert elevation ► Rim elevation ► Pipe size ► Pipe shape ► Pipe material ► grate/lid information (closed, open, type) ► Specialty structure info (restrictor, backflow preventer, etc.)
Cross Sections	5	Overland flow routes (assume approximately 200 ft length)
High Water Marks	5	
Building Low Entry Information	25	► first floor elevation ► low entry points (window wells, walkouts, etc.)

Data collected as part of the field survey will be inducted into AutoCAD in order to develop work maps for the project.

Subtask A.7

Perform Storm Sewer Condition Investigation (subconsultant - SEE ATTACHMENT B)

Televise approximately 2500 lineal feet of storm sewer and prepare a summary of the condition of the existing system.

Subtask A.8

Perform Geotechnical Investigation (subconsultant - SEE ATTACHMENT C)

A geotechnical investigation will be performed in order to determine the variation in soil characteristics within Lebeck Park.

Subtask A.9

Perform Phase I Environmental Site Assessment - SEE ATTACHMENT D

A Phase I Environmental Site Assessment will be conducted to identify past uses and potential environmental issues associated with Lebeck Park.

TASK B: Analysis of Existing Conditions

Amec Foster Wheeler will develop a hydrologic and hydraulic model using the H&H models prepared by others as the foundation for the analysis. It is our understanding that both XP-SWMM and EPA SWMM were used to perform the previous studies mentioned in Subtask A.3. Amec Foster Wheeler will use XP-SWMM to simulate the performance of the stormwater management system (XP Software's Storm Water Management Model). XP-SWMM is well-suited for this application due to its ability to model the system dynamically allowing for the interaction of system elements such as overland flow channels, ponds and closed conduits. Bulletin 70 rainfall and the Huff quartile distributions will be used along with the hydrologic parameters (area, curve number, and time of concentration) to generate runoff for the 2-, 5-, 10-, 50-, and 100-year storm events. Details regarding the conveyance system (pipes and overland flow channels) as well as stage-storage-discharge characteristics for stormwater storage areas will be entered into the model in order to evaluate the hydraulic behavior of the system. The downstream boundary conditions for the stormwater management system will be developed based upon the modeling performed as part of the previous studies. The existing condition model will be calibrated using the April 17-18, 2013 storm event. The system performance will be checked against high water mark data and other anecdotal flooding information for the April 17-18, 2013 storm.

Subtask B.1

Bench Test Existing H&H Model(s)

The H&H models prepared by others will be tested without modification and the results compared to the output/results provided in the original studies. This will ensure that the models are producing the results that were used to make previous decisions. Discrepancies in model results can result from differences in software version, changes made to model input since the original study was performed and differences in computer hardware. If differences in the model results are identified, they will be investigated and a proper course of action determined.

Subtask B.2

Construct/Update Existing Condition H&H Model(s)

An existing condition XP-SWMM model will be constructed using elements of the XP-SWMM model prepared by others for the Westmont Stormwater Master Plan (2011). The 2011 model will be updated to the extent necessary to ensure that sufficient detail is included. The following tasks shall be performed as needed:

- Review and revise model study limits
- Review and revise model boundary conditions
- Review and revise watershed/subbasin delineation
  NOTE: the three preceding bullet points include reviewing the potential for flow diversion to the St. Joseph Creek watershed
- Review and revise hydrologic parameters [Subbasin Area, Runoff Curve Number, and Time of Concentration (NRCS velocity method)]
- Review and revise link data (pipes, channels, orifices, weirs, etc.)
- Review and revise node data (manholes, catch basins, outfalls and other hydraulic junctions/terminal points as well as stormwater storage units)
- Review and revise synthetic precipitation depth and distribution information (Bulletin 70 rainfall depths with Huff distributions) and April 17-18, 2013 calibration event precipitation event hyetograph data.

The link and node system reflecting the individual model components will be constructed in XP-SWMM. This includes explicitly representing the storm sewer system, overflow routes, and existing stormwater storage areas (including areas of ponding above inlets and catch basins). This will also include the input of the hydrologic parameters and precipitation data for both the synthetic storm and calibration event evaluations. Appropriate boundary conditions will be established for the terminal points associated with the stormwater management system.

Subtask B.3

Run Existing Condition H&H Model

Once the model is constructed, the synthetic Huff storms will be used to debug the model. This evaluation will include performing a critical duration analysis for the 2-, 5-, 10-, 50-, and 100-year storms. The April 17-18, 2013 precipitation event will be used to calibrate the existing condition model. The purpose of the calibration is to ensure that the hydrologic parameters and the hydraulic system representation have been accurately described. The calibration will use high water mark data as the recorded data to be compared to the simulation results. After the model has been calibrated, the 2-, 5-, 10-, 50-, and 100-year critical duration storms will be run again to establish the baseline condition for the evaluation.

Subtask B.4

Flooding Problem Characterization

Flooding problems will be identified utilizing the results of the H&H analysis, questionnaire data, drainage complaint records, and other anecdotal flooding information provided by the Village (see data collected in Subtask A.4). A flood damage map will be prepared for the Lebeck Park / Richmond & Grant area. A summary of the type and identified sources of flooding for individual parcels will be prepared.

TASK C: Analysis of Alternatives

The analysis of alternatives will include developing clear project goals, identifying possible alternatives and evaluating the alternatives based upon H&H model simulation results and estimated costs.

Subtask C.1

Definition of Project Goals

Based upon the problem characterization prepared in Subtask B.4, Village staff and Amec Foster Wheeler will work together to define clear and measurable goals for what the Village perceives as a "successful" project. We anticipate having one meeting to discuss the following:

- Categorizing and prioritizing the problems identified in Subtask B.4 so that it is clear which of the problems must be addressed;
- Defining the desired level of protection for specific flooding problems to be addressed.

Subtask C.2

Definition of Alternatives

Based upon the sources of flooding, problem types and the project goals defined in Subtasks B.4 and C.1, a compilation of possible alternative solutions will be prepared. Where appropriate, the alternative definition will consider preliminary design criteria such as local regulatory constraints, design policy/guidance, and target level of protection.

Subtask C.3

Construct/Update Proposed Alternatives H&H Model

A proposed condition XP-SWMM model will be constructed for each alternative that includes proposed modifications to the stormwater management system. The model will be modified to reflect proposed changes to the conveyance and storage elements as well as any anticipated land cover changes. A maximum of three (3) proposed condition stormwater management system configurations will be evaluated using XP-SWMM.

Subtask C.4

Run Proposed Alternatives Condition H&H Model(s)

The synthetic Huff storms will be used to debug each of the alternative condition models. This evaluation will include performing a critical duration analysis for the 2-, 5-, 10-, 50-, and 100-year storms.

Subtask C.5

Prepare construction cost estimates

Proposed construction cost estimates associated with each alternative will be developed. Planning level quantities will be based upon work maps and models and therefore will be approximate. Unit costs will be taken from local bid tab information provided by the Village. Long-term operation and maintenance costs will also be estimated in order to develop a true cost for each alternative. This subtask also includes a preliminary constructability review of constructed alternatives.

TASK D – Preparation of Project Report

A project report will be prepared summarizing the results of the existing condition H&H evaluation, existing flooding problems, alternatives analysis and costs for each alternative. Exhibits will be included describing each of the proposed alternatives. A draft version of the report will be provided to the Village for review and comment (limited to one review and comment opportunity). One markup of the document shall be provided to Amec Foster Wheeler. Modifications will be made to the report, if necessary, and a final report will be prepared and provided to the Village.

TASK E – Project Management and Coordination

After the notice to proceed is issued, Amec Foster Wheeler will attend a kickoff meeting with staff from the Village of Westmont, in order to obtain pertinent data, finalize the project schedule and discuss the project approach. A field walk of the project area will be conducted on the same day as the kickoff meeting. One (1) stakeholder meeting will be scheduled in order to discuss the results of the alternatives analysis (participants will likely include Village of Westmont Public Works staff, representatives from the Westmont Park District staff and representatives from Community Unit School District 201. Three (3) project progress meeting will be scheduled with Village of Westmont Public Works staff during the project to review various technical aspects of the project such as data collection and modeling details. Amec Foster Wheeler will also attend one (1) Westmont Public School board meeting and one (1) Community Unit School District 201 to present alternatives to the respective boards. Amec Foster Wheeler will be responsible for the scheduling and coordination of all progress meetings and will coordinate with Village of Westmont staff to schedule the stakeholder meeting.

Amec Foster Wheeler will also provide the Village's project manager with weekly project progress reports summarizing budget status information, work performed to date, work to be initiated in the upcoming week as well as any issues that need to be resolved. These weekly updates ensure that Village and Amec Foster Wheeler staff remain in frequent contact so that they are able to monitor the project together, both technically and administratively, so that issues can be identified and addressed early, before they turn into large problems leading to budget overruns and delays.

The following tasks are also included under this task:

- Client coordination (phone and e-mail correspondence)
- PM Tool preparation and maintenance (task guidance, schedule, budget management/invoicing, responsibility matrix)

Deliverables

1. Electronic copies of hydrologic and hydraulic model and associated documentation
2. Project report (five hardcopies of the report and *.pdf copy)
3. Supplemental field survey data
4. Geotechnical report
5. Storm sewer condition information
6. Phase I environmental report
7. Exhibit(s) for stakeholder meeting

Assumptions & Comments

Item 1

Synthetic rainfall will be based upon Bulletin 70 rainfall depths applied using the Huff quartile rainfall distributions.

Item 2

The basis for the modeling will be the XP-SWMM model prepared by others. The H&H model will be provided by the Village and will be assumed to be in good working order, that is, it has been debugged and is in stable running condition. Amec Foster Wheeler will use this model as the foundation for this evaluation.

Item 3

H&H model updates related to the Lebeck Park / Grant & Richmond area will be limited to the area west of Cass Avenue.

Item 4

Amec Foster Wheeler will assume that the backflow preventer is in place for the existing/baseline condition. The backflow preventer will be installed at the intersection of Lincoln and Richmond.

Item 5

The number of alternative conditions that will be simulated using the H&H model will be limited to 3. Alternatives that require simulation might include, surface stormwater storage, underground level pool stormwater storage/vault, in-line pipe stormwater storage, etc.

Item 6

The field survey will not be a design-level survey (that will be required under Phase II/design). The Phase I survey will be limited to collecting supplemental data for the H&H simulation due to data being missing or suspicious (e.g., sewer rims, inverts, pipe sizes, materials, overland route cross sections, high water marks, and building low entry data).

Item 7

Identification of existing wetlands, threatened and endangered species, and existing wildlife habitat is not included in this scope.

Item 8

An Illinois Historic Preservation Agency consultation is not included in this scope.

Item 9

An investigation of flooding due to sanitary sewer system inflow and infiltration (including leaking lateral connections) is not included as part of this evaluation. In the event that the current sanitary sewer system is in poor condition, it is possible that the existing depressional storage utilizes the sanitary sewer system to drain.

Item 10

It is assumed that electronic versions of the H&H models prepared by CBBEL and CDF for previous studies will be provided in electronic format (that is, all associated input files and associated mapping). The Village shall provide this data to Amec Foster Wheeler.

Item 11

Quality checking is included within the task work (not included in the PM task)

Item 12

The client will assign a single point of contact to manage the project and provide direction to Amec Foster Wheeler project manager.

Item 13

The Village will pay all fees/charges for additional data needed as part of the study (these fees have not been included in the project budget).

Item 14

The Village of Westmont shall provide the data listed in the table below (at no cost) to Amec Foster Wheeler Environment & Infrastructure, Inc.

ITEM	COMMENT
1 ft contours (Westmont data)	Electronic data (*.shp and/or *.dwg)
2 ft contours (DuPage County data)	Electronic data (*.shp and/or *.dwg)
Aerial photography	Electronic data
Subbasin boundaries (CBBEL and CDF studies)	Electronic data (*.shp and/or *.dwg)
Roadway rights-of-way (ROW)	Electronic data (*.shp and/or *.dwg)
Road pavement boundaries	Electronic data (*.shp and/or *.dwg)
Building footprints	Electronic data (*.shp and/or *.dwg)
Parcel boundaries with PINs	Electronic data (*.shp and/or *.dwg)
Existing easements	Electronic data (*.shp and/or *.dwg)
Wetland boundaries	Electronic data (*.shp and/or *.dwg)
Storm sewer atlases (filename: STORM.DWG)	Electronic data (*.dwg)
As-Built or Record drawings (development within area)	Electronic data (*.shp and/or *.dwg)
CBBEL XPSWMM model (including all supporting calculations and data)	Electronic data
CDF SWMM model (including all supporting calculations and data)	Electronic data
Historic flooding questionnaires	Prefer electronic, but hardcopy ok.
Village drainage complaint records	Electronic data
High water mark data	Prefer electronic, but hardcopy ok.
Field survey data from previous studies	Prefer electronic, but hardcopy ok.
Westmont Stormwater Master Plan report (CBBEL)	Electronic
Westmont Green Infrastructure Feasibility Study (CDF) – specifically for Grant and Richmond area	Electronic
Local unit cost data for construction costs	Prefer electronic, but hardcopy ok.

ATTACHMENT A

LIN ENGINEERING,LTD.
Consulting Engineers
Springfield, IL

3261 South Meadowbrook Road
Springfield, Illinois 62711
Telephone: (217) 679-2928
Fax: (217) 679-2736
E-mail: info@lineng.com

September 14, 2016

GENERAL SCOPE

Provide surveying support services for a drainage study located in the Village of Westmont, Illinois in the vicinity of Lebeck Park.

Anticipated survey work will be approximately 50 hydraulic structures (structure type, rim/invert elevations, pipe sizes, pipe shape, pipe material, etc.), approximately 5 cross-sections at various locations of overland flow routes, survey of high water marks at 5 locations, and building low entry information at 25 locations (first floor elevation, low entry points such as window wells, walkouts, etc.). Surveys will be done to locate up to 5 soil boring / groundwater monitoring wells (location & elevation) in the vicinity of Lebeck Park.

Previously surveyed data is also anticipated to be used. LIN field crews will collect horizontal/vertical data for a few structures from previous surveys to verify correlate the surveys to match.

Survey work to be done utilizing RTK GPS and/or VRS for horizontal & vertical control consistent with previous survey work done on this project.

Entry into confined spaces is not included in this estimate.

Field Work	Verify / Check previous survey datum	8 MH
	50 hydraulic structures	32 MH
	Cross-Sections	16 MH
	High Water Marks	8 MH
	Building Low Entry	32 MH
Download / Process Survey Data / Plan Drafting		12 MH
	QC/QA	4 MH
	Administration	6 MH
	TOTAL:	**118 MH**

Summary of Deliverables

- Field survey drawing in Microstation dgn format
- Copies of Field Books
- Photos of hydraulic structures and cross sections
- ASCII text file of all survey points (north, east, elevation, description)
- Spreadsheet listing the cross section data taken

DETAILED BREAKDOWN OF DIRECT COSTS

Cadd Hours	12 hrs X $15/hour	$ 180.00
Mileage		
6 days x 10 miles/day x $0.54		$ 32.40
	TOTAL ESTIMATE:	**$ 212.40**

September 14, 2016 Drainage Surveys - Westmont, IL

Classification	Rate	MH	Subtotal
Principal	$ 70.00	6	$ 420.00
Project Manager	$ 67.40	4	$ 269.60
PLS	$ 46.23	12	$ 554.76
Survey Technician	$ 25.27	96	$ 2,425.92
		118	$ 3,670.28

Direct Labor Multiplier (DL x OH&P)

$ 3,670.28 x 2.6549 = **$9,744.23**

Direct Costs

Mileage	60 x $0.54/mi. =	$	32.40
CADD	12 x $15/hr =	$	180.00
	Total =	**$**	**212.40**

Total Contract = DLM + Direct Costs = **$9,956.63**

ATTACHMENT B

Visu-Sewer
Inspect. Maintain. Rehabilitate.

Proposal

To: James Kessen, PE
AMEC Foster Wheeler
8745 W Higgins Rd
Chicago, IL 60631
773-380-8797

From: Todd Bonk - tbonk@visu-sewer.com
Visu-Sewer of Illinois, Inc
9014 S Thomas Ave
Bridgeview, IL
708-237-0340 - Office 708-774-5964 - Cell

Date: 7/31/2016 **Project:** Storm Sewer CCTV Inspection

Visu-Sewer is pleased to offer the following service:

Jet cleaning, vacuum extraction of debris, and CCTV inspection of approximately 2,000 linear feet of various size storm sewer from 8-24" including a 14" x 23" elliptical pipe section in Westmont, IL for AMEC Foster Wheeler. Project shall consist of high pressure jetting of each pipe section, extracting captured debris using a high volume vacuum system, two copies of DVD's, and inspection reports with PACP codes.

Price - $3.95 per linear foot
(Based on a minimum of 2,000 LF)

The Village of Westmont will need to provide access to all manholes, detailed maps, water from nearby hydrants (without charge), a dump site for captured debris, and traffic control beyond cones and signs.

Thank you for the opportunity to quote on your project.

If you have any questions please do not hesitate to contact us at 708-237-0340 (office) and 708-774-5964 (cell).

All material guaranteed to be as specified. All work to be completed in a substantial workmanlike manner according to specifications submitted, per standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workmen's Compensation Insurance. This proposal may be withdrawn if not accepted within 30 days of issue. Time and material rates are charges "port to port". Terms - Net 30 days.

Acceptance of Proposal

The above prices, specifications and conditions are satisfactory and are hereby accepted. Visu-Sewer, Inc. is authorized to do the work as specified.

Date: _____ Signature: _____

ATTACHMENT C

Geo Services, Inc.
Geotechnical, Environmental and Civil Engineering
An MBE - DBE Firm

August 25, 2015
Latest Revision: August 31, 2016

AMEC Foster Wheeler
8745 West Higgins Road, Suite 300
Chicago, Illinois 60631

Attn: Mr. James F. Kessen, P.E.
Water Resources Engineer

Proposal 15675_R2

Re: Geotechnical Subsurface Exploration
Lebeck Park Flood Investigation
Westmont, Illinois

Dear Mr. Kessen:

In accordance with your request, Geo Services, Inc. (an MBE / DBE / union / drilling / environmental / geotechnical engineering firm) is pleased to submit this proposal for the performance of geotechnical exploration in support of the Flood Investigation at Lebeck Park in Westmont, Illinois. The project includes a study of an approximate 3.5-acre area that includes the park and adjacent streets to evaluate the cause of frequent localized flooding and potential alternatives to alleviate the flooding problem.

Based upon the criteria described in the request for proposal and our subsequent discussions, Geo Services proposes the following scope of services for the project:

Scope of Services

1) Layout boring and pavement core locations.
2) Call J.U.L.I.E. and schedule joint meet to clear onsite utilities prior to our mobilization to the site.
3) Perform five (5) soil borings to a depth of 25 feet at the approximate locations shown on the attached site diagram. Final boring locations will be determined after a review of access and overhead and underground utilities have been identified.
4) Perform pavement cores at three (3) borings located within Richmond and Grant Streets.
5) Soil samples will be obtained at 2.5-ft intervals to a depth of 10 feet and at 5 feet intervals below this depth. Sampling will be in accordance with 2-inch diameter split spoon sampling methods. Boreholes will be backfilled with soil cuttings and pavements patched upon completion.
6) Upon completion of the drilling and sampling, install 2-inch diameter PVC ground water monitoring wells at 3 of the boring locations. Wells will consist of 10-foot long 0.010 slot Schedule 40 PVC well screen with flush coupled PVC riser pipe.
   The riser pipe will extend about 3 feet above ground surface and be fitted with a locking cap. For the 2 wells within the park, temporary steel fence posts and snow fencing will be installed around the stick-up pipe to protect the well during the period that readings will be obtained. For 1 well in the street, a flush-mount protective steel cover will be installed.
7) Perform in-situ single ring infiltration tests near 2 select boring locations.

8) Complete routine laboratory testing on representative soil samples for classification purposes.
9) Prepare an initial geotechnical engineering report upon completion of the borings and infiltration tests.
10) GSI personnel will obtain water level readings in the wells on a monthly basis for a period of 12 months. Upon completion of the water level readings, we will return to the site to abandon the wells by cutting off the pipes below ground surface, filling with sand and plugging with bentonite chips and soil cuttings. The flush-mount cover for the well in the pavement will be left in place after the well pipe is plugged. *(Alternatively, some cost savings could be realized if Westmont public works personnel obtain the monthly readings and complete the well abandonments.)*
11) Update the geotechnical report with incorporation of the longer term water level data and any revisions that are warranted as a result of this data.

The following information will be included in the geotechnical investigation report:

1. Soil conditions
2. Ground water observations
3. Results of pavement cores
4. Laboratory soil classifications and field infiltration test results.
5. Discussion of subsurface conditions relative to storm water management options, such as, construction of a detention(dry) or retention(wet) basin, underground detention vault, porous pavement / infiltration system.
6. Recommendations relative to any unusual design or construction techniques which may be required due to subsurface conditions.
7. Copies of boring logs, location diagram and test results.

Field Work Assumptions:

1. We have assumed that access to the boring locations will require use of an ATV-mounted drill rig and placing plywood sheets due to anticipated soft ground conditions.
2. No costs for permits or construction bonds have been included.
3. See #1 above. Cost for repair to landscaping or rutting due to vehicle traffic across the site is not included.
4. Traffic control will include signs and cones only. Cost for flaggers, if required, is not included in the proposal.
5. The work specifically does not include any environmental sampling or testing. Level D personal protection is assumed.
6. No fence removal, tree clearing or snow removal costs are included in this proposal. If access to the borings and/or project schedule require GSI to contract for these services, the corresponding additional fees will be invoiced to the client.
7. We understand that the Client will arrange for an access agreement, if needed, for GSI to enter property to perform the work.
8. Any private utilities are to be located prior to our mobilization to the site by property owner. If property owner is unwilling or unable to locate private utilities, GSI to be notified in advance by client. Additional costs to this proposal will be required to hire an independent utility locator to locate utilities. GSI is not responsible for hitting unmarked or incorrectly marked utilities.
9. Work can be performed during normal week day work hours, M - F, 8 AM – 5 PM.

On the basis of the scope of work outlined above and the unit charges indicated on the attached Cost Estimate of Geotechnical Services, we estimate that the cost of the geotechnical investigation will be **$24,120.00**. The above cost estimate assumes that the labor rates for the drillers will need to be in accordance with the published prevailing wage rates (Illinois Prevailing Wage Act, 820 ILCS 130/2).

Any additional work will be performed at the appropriate unit charges or hourly rates indicated on our cost estimate of services. All work will be performed in accordance with the attached Terms and Conditions.

We appreciate the opportunity to provide geotechnical engineering services for you on this project and look forward to hearing from you when work is ready to begin. If there are any questions regarding the information submitted herein, please do not hesitate to contact us.

Very truly yours,
GEO SERVICES, Inc.

Stephen A. Bucher, P.E.
Senior Geotechnical Engineer

Andrew J. Ptak, P.E.
Office Manager

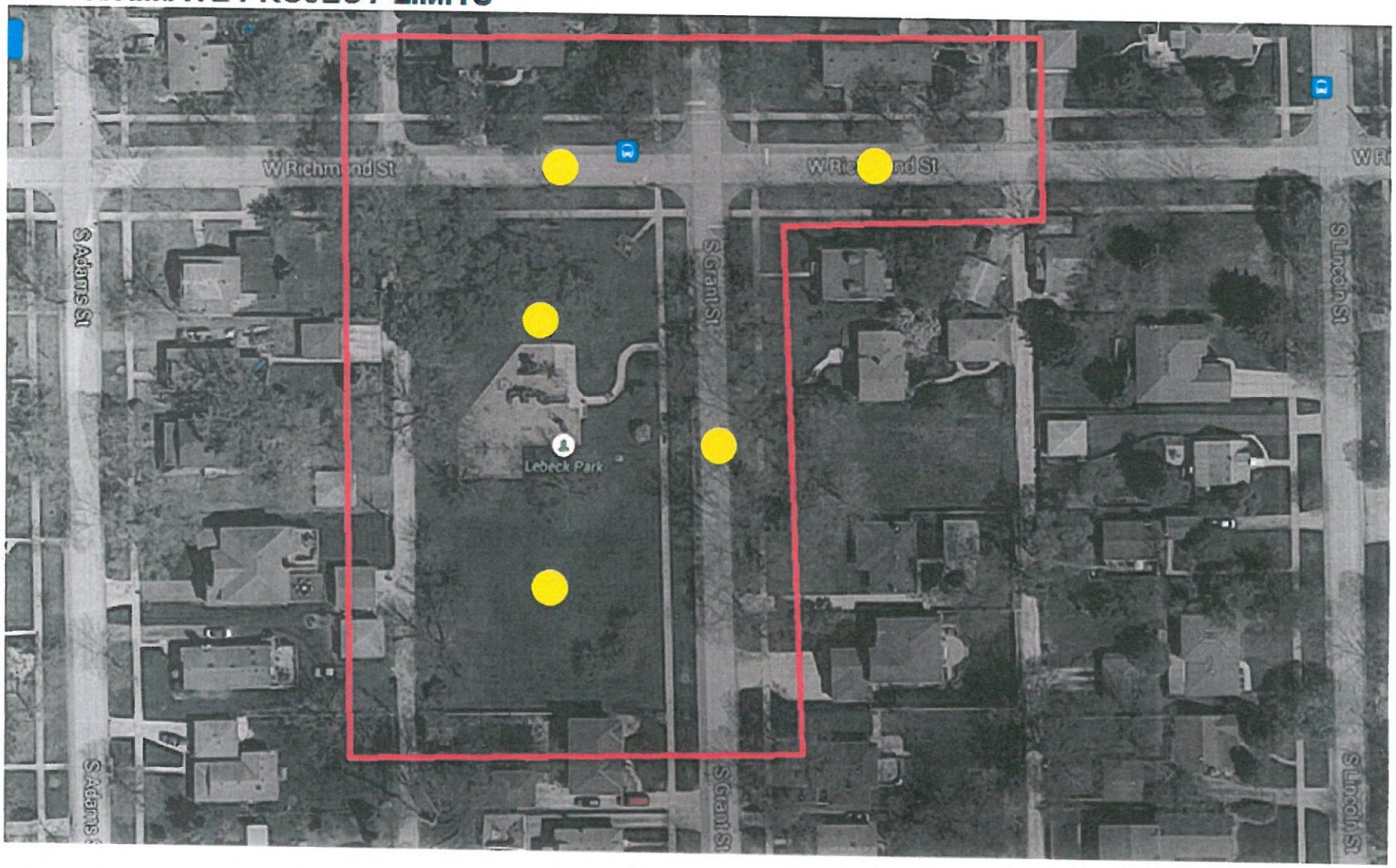
Enc.

ACCEPTED FOR AMEC FOSTER WHEELER

BY _____

DATE _____

APPROXIMATE PROJECT LIMITS



PROPOSED BORING LOCATIONS

COST ESTIMATE

CONSULTANT: Geo Services
PROJECT: Lebeck Park, Westmont, IL
PROPOSAL NO.: 15675_R2 2016 rates
SCOPE: 5 borings @ 25 feet deep / 2 infiltration tests / install 3 monitor wells / WL readings / backfill wells

DATE: August 30, 2016

	Description (1)	Unit (2)	Quantity (3)	Unit Cost (4)	Total Cost (5)
1	Drilling Services (Prevailing Wage)				
2	Mob / Demob - ATV drill rig	HOUR	8.0	$ 150.00	$ 1,200.00
3	Plywood sheets	L.S.	1.0	$ 350.00	$ 350.00
2	Drilling (2 man crew) (8-hrs)	DAY	3.0	$ 2,400.00	$ 7,200.00
3	Grout Materials	FT	-	$ 6.00	$ -
4	Drill Rig&Crew Standby/Delay Time	HOUR	-	$ 300.00	$ -
5	Drilling (2 man crew) - Overtime and Sat.	HOUR	-	$ 450.00	$ -
6	Drilling (2 man crew) - Sun. and Holidays	HOUR	-	$ 600.00	$ -
7	Backfill wells (Time & Material included)	EACH	3.0	$ 750.00	$ 2,250.00
7	Drilling-Additional Items		-		
8	Monitor Well materials	EACH	3.0	$ 250.00	$ 750.00
9	Field Technician/Engineer (for joint meet/boring layout)	HOUR	4.0	$ 90.00	$ 360.00
10	Water level readings (Technician plus vehicle) / per set)	EACH	12.0	$ 425.00	$ 5,100.00
10	3" Shelby Tubes	EACH	4.0	$ 25.00	$ 100.00
11	Signage, Cones, Barricades	EACH	2.0	$ 100.00	$ 200.00
12	Permits	HOUR	-	$ 90.00	$ -
13	Support Truck/Vehicle	DAY	3.0	$ 55.00	$ 165.00
14	Core machine and Generator	DAY	1.0	$ 150.00	$ 150.00
15	Lights	DAY	-	$ 75.00	$ -
16	Overnight Delivery	EACH	-	$ 25.00	$ -
17					
18	**Drilling Services - Subtotal**				**$ 17,825.00**
19					
20	Laboratory Testing				
21	Routine Sampling (vis, wc, hd. Pen)	EA	35.0	$ 15.00	$ 525.00
22	Atterberg Limits	EA	3.0	$ 50.00	$ 150.00
23	Particle Size Analysis	EA	3.0	$ 100.00	$ 300.00
24	Unconfined Compression - Rimac	EA	-	$ 10.00	$ -
25	UU Test	EA	-	$ 100.00	$ -
26	Dry Density	EA	-	$ 5.00	$ -
27	Organic Content	EA	-	$ 100.00	$ -
28	Consolidation Test (16 tsf)	EA	1.0	$ 750.00	$ 750.00
28	Laboratory Manager	HOUR	1.0	$ 80.00	$ 80.00
29	Laboratory Assistant	HOUR	-	$ 60.00	$ -
30					
31	**Laboratory Testing Subtotal**				**$ 1,805.00**
32					
33	Engineering Analysis and Report				
34	Principal Engineer	HOUR	1.0	$ 200.00	$ 200.00
35	Project Manager	HOUR	4.0	$ 150.00	$ 600.00
36	Project Engineer	HOUR	24.0	$ 90.00	$ 2,160.00
37	CAD Professional	HOUR	8.0	$ 90.00	$ 720.00
38	Administrative Assistant	HOUR	3.0	$ 60.00	$ 180.00
39					
40	**Engineering Analysis and Report Subtotal**				**$ 3,860.00**
41					
42	Project Coordination/Management				
43	Principal Engineer	HOUR	-	$ 200.00	$ -
44	Project Manager	HOUR	3.0	$ 150.00	$ 450.00
45	Project Engineer	HOUR	-	$ 90.00	$ -
46	CAD Professional	HOUR	-	$ 90.00	$ -
47	Administrative Assistant	HOUR	3.0	$ 60.00	$ 180.00
48					
49	**Project Coordination/Management Subtotal**				**$ 630.00**

TOTAL	$ 24,120.00

GENERAL CONDITIONS

SECTION 1: SCOPE OF WORK: Geo Services, Inc. (GSI) shall perform the services defined in the Agreement and shall invoice the client for those services according to the rates and unit charges indicated in the Agreement. Any cost estimates stated in this Agreement shall not be considered as a firm figure unless otherwise specifically stated in this contract. If unexpected site conditions are discovered, the scope of work may change even as the work is in progress. GSI will provide these additional services at the agreed upon rates and unit charges.

Rates for work beyond the scope of this Agreement and not covered in the Agreement can be provided. GSI can perform additional work with prior authorization, and will provide confirmation of fees. All costs incurred because of delays in authorizing the additional work will be billed to the client. Fee schedules are valid for one year following the date of the Agreement unless otherwise noted. Initiation of services by GSI pursuant to this proposal will incorporate these terms and conditions.

SECTION 2: ACCESS TO SITES, PERMITS AND APPROVALS: Unless otherwise agreed, the client will furnish GSI with right-of-access to the site in order to perform the work. While GSI will take all reasonable precautions to minimize any damage to the property, it is understood by the client that in the normal course of work some damage may occur, the restoration of which is not part of this agreement. Unless otherwise agreed, the client will secure all necessary approvals, permits, licenses and consents necessary to the performance of the services hereunder.

SECTION 3: SOIL BORING AND TEST LOCATIONS: The accuracy and proximity of provided survey control will affect the accuracy of in-situ test location and elevation determinations. Unless otherwise noted, the accuracy of test locations and elevations will commensurate only with pacing and approximate measurements or estimates. If greater accuracy is required, the services of a professional surveyor should be obtained.

The client will furnish GSI with a diagram indicating the location of the site. Boring and test locations may also be indicated on the diagram. GSI reserves the right to deviate a reasonable distance from the boring and test locations unless this right is specifically revoked by the client in writing at the time the diagram is supplied. GSI reserves the right to terminate this Agreement if conditions preventing drilling at the specified locations are encountered which were not made known to GSI prior to the date of this contract.

SECTION 4: UTILITIES: In the performance of its work, GSI will take all reasonable precautions to avoid damage or injury to subterranean structures or utilities. The client agrees to hold GSI harmless and indemnify GSI for any claims, payments or other liability, including costs and attorney fees, incurred by GSI for any damages to subterranean structures or utilities which are not called to GSI's attention and correctly shown on the plans furnished to GSI.

SECTION 5: UNANTICIPATED HAZARDOUS MATERIALS: It shall be the duty of the owner, the client, or their representative to advise GSI of any known or suspected hazardous substances which are or may be related to the services provided; such hazardous substances include but are not limited to products, materials, by-products, wastes or samples of the foregoing which GSI may be provided or obtain while performing its services or which hazardous substances exist or may exist on or near any premises upon which work is to be performed by GSI employees, agents or subcontractors.

SECTION 6: DISPOSAL OF HAZARDOUS MATERIALS: GSI does not create, generate or at any time own or take possession or ownership of or arrange for transport, disposal or treatment of hazardous materials as a result of its exploration services. All hazardous materials, including but not limited to samples, drilling fluids, decontamination fluids, development fluids, soil cuttings and tailings, and used disposable protective gear and equipment, are the property of the client, and responsibility for proper transportation and disposal is the client's unless prior contractual arrangements are made. All laboratory and field equipment that cannot readily and adequately be cleansed of its hazardous contaminants shall become the property and responsibility of the client. The client shall purchase all such equipment and it shall be turned over to the client for proper disposal unless prior alternate contractual arrangements are made.

SECTION 7: REPORTS AND INVOICES: GSI will furnish three copies of the report to the client. The client will be billed for any additional copies requested. GSI will submit invoices to the client monthly and a final bill upon completion of services. Payment is due upon presentation of invoice and is past due thirty (30) days from the invoice date. Client agrees to pay a finance charge of one and one-half percent (1-1/2%) per month, but not exceeding the maximum rate allowed by law, on past due accounts. Client also agrees to pay all costs and expenses, including reasonable attorney fees incurred by GSI relating to collection procedures on overdue accounts. Failure of client to abide by the provisions of this section will be considered ground for termination of this agreement by GSI.

SECTION 8: OWNERSHIP OF DOCUMENTS: All reports, boring logs, field data, field notes, laboratory test data, calculations, estimates, and other documents prepared by GSI as instruments of service, shall remain the property of GSI unless there are other contractual agreements.

SECTION 9: CONFIDENTIALITY: GSI shall hold confidential all business or technical information obtained from the client or his affiliates or generated in the performance of services under this agreement and identified in writing by the client as "confidential". GSI shall not disclose such information without the client's consent except to the extent required for: 1) Performance of services under this agreement; 2) Compliance with professional or ethical standards of conduct for preservation of public safety, health, and welfare; 3) Compliance with any court order or other governmental directive and/or; 4) Protection of GSI against claims or liabilities

arising from performance of services under this agreement. GSI's obligation hereunder shall not apply to information in the public domain or lawfully acquired on a non-confidential basis from others.

SECTION 10: STANDARD OF CARE: Services performed by GSI under this Agreement will be conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. No other warranty, expressed or implied, is made or intended by the proposal for consulting services or by furnishing oral or written reports of the findings made. The client recognizes that subsurface conditions may vary from those encountered at the location where borings, surveys, tests or explorations are made by GSI and that the data, interpretations and recommendations of GSI are based solely upon the data available to GSI. GSI will be responsible for those data, interpretations and recommendations, but shall not be responsible for the interpretations by others of the information developed.

SECTION 11: SAFETY: GSI has adopted safety policy procedures for its personnel when providing services at known or suspected hazardous waste sites. GSI personnel will adhere to these procedures, as site conditions require. GSI is not responsible or liable for injuries or damage incurred by third parties who are not employees of GSI.

It is understood that GSI will not be responsible for job or site safety of the project. Job and site safety will be the sole responsibility of the contractor unless contracted to others.

SECTION 12: SUBPOENAS: The client is responsible, after notification, for payment of time charges and expenses resulting from the required response by GSI to subpoenas issued by any party other than GSI in conjunction with work performed under this contract. Charges are based on fee schedules in effect at the time the subpoena is served.

SECTION 13: LIMITATION OF LIABILITY: The client agrees to limit GSI's liability to the owner, all construction contractors and subcontractors on the project and any third party arising from GSI's professional acts, errors or omissions, or omissions or breach of Agreement or other cause of action, such that the total aggregate liability of GSI to all those named shall not exceed $10,000 or GSI's total fee for the services rendered on this project, whichever is greater, and client hereby releases GSI from any liability above such amount. The client further agrees to require of the contractor and his subcontractors an identical limitation of GSI's liability for damages suffered by the contractor or the subcontractor arising from GSI's performance of services. Neither the contractor nor any of his subcontractors assumes any liability for damages to others, which may arise on account of GSI's professional acts, errors or omissions.

SECTION 14: INSURANCE: GSI carries worker's compensation and employer's liability insurance and has coverage under public liability and property damage insurance policies. Certificates for all such policies of insurance will be provided to client upon request. Within the limits and conditions of such insurance, GSI agrees to indemnify and save client harmless from and against any loss, damage, injury or liability arising from any negligent acts of GSI, its employees, agents, subcontractors and their employees and agents. GSI shall not be responsible for any loss, damage or liability beyond the amounts, limits and conditions of such insurance. GSI shall not be responsible for any loss, damage or liability arising from any acts by a client, its agents, staff consultants employed by others, or other third parties who are not employees of GSI.

SECTION 15: INDEMNITY: The client acknowledges that GSI has neither created nor contributed to the creation or existence of any hazardous, radioactive, toxic, irritant, pollutant, or otherwise dangerous substances or conditions at the site. Accordingly, except as expressly provided in this contract, the Client waives any claim against GSI and agrees to indemnify and save GSI, its agents, and employees harmless from any claim, liability or defense cost, including but not limited to attorney fees and other incidental costs, for injury or loss sustained by any party from such exposures allegedly arising out of or related to GSI's performance of services hereunder. Client and GSI agree that they will not be liable to each other, under any circumstances, for special, consequential or punitive damages arising out of or related to this Contract.

SECTION 16: SAMPLES: GSI will retain all soil and rock samples that are transported to GSI laboratories for 30 days after submission of the report. Further storage or transfer of samples can be made at client expense upon written request.

SECTION 17: SEVERABILITY: If any of the provisions contained in this Agreement are held illegal, invalid, or unenforceable, the enforceability of the remaining provisions will not be impaired.

SECTION 18: TERMINATION: This Agreement may be terminated by either party upon seven (7) days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof. Such termination shall not be effective if that substantial failure has been remedied before expiration of the period specified in the written notice. In the event of termination, GSI shall be paid for services performed to the termination notice date plus reasonable termination expenses. Expenses of termination or suspension shall include all direct costs of GSI required to complete analyses and records necessary to complete its files and may also include a report on the services performed to the date of notice of termination or suspension.

SECTION 19: PRECEDENCE: These General Conditions shall take precedence over any inconsistent or contradictory provisions contained in any proposal, contract, purchase order, requisition, notice to proceed, or like document regarding GSI's services.

ATTACHMENT D

Proposal for Phase I Environmental Site Assessment (Phase I ESA)
Lebeck Park
Corner of Richmond Street and Grant Street
Westmont, Illinois

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) is pleased to submit this proposal to perform a Phase I Environmental Assessment (Phase I ESA) for the above-referenced property. Amec Foster Wheeler's understanding of this project is based upon your project overview provided to us. This proposal, including the Scope of Services, is specifically subject to the conditions and assumptions described below and in the attached Professional Services Agreement. If any of this information is incorrect, please notify us to allow us to revise our proposal, if necessary.

PROJECT INFORMATION

Amec Foster Wheeler has prepared this proposal to complete a Phase I ESA of Lebeck Park (subject property). The property is located at the Located at the southwest corner of Richmond Street and Grant Street in Westmont, Illinois. Lebeck Park is 1.3 acres vacant parkland containing a playground, picnic area and open play space

SCOPE OF WORK

Task 1 - Phase I ESA

A Phase I ESA will be conducted for the subject property. The purpose of a Phase I ESA is to evaluate the presence or potential presence of recognized environmental conditions (RECs) on the subject property as a result of present or past activities on the subject property or in the vicinity of the subject property. The Phase I ESA will be conducted in general accordance with the United States Environmental Protection Agency's (USEPA) All Appropriate Inquiry (AAI) Rule and ASTM International, Inc. (ASTM) E1527-13. The following scope of work has been prepared so that the completed Phase I ESA meets the requirements of ASTM Standard E1527-13 and will assist the Client in meeting the requirements of the US EPA AAI Rule.

Amec Foster Wheeler plans to conduct the following services for the subject property:

- **Review of available historical documentation:** A review of historical documentation will be performed for the subject property and surrounding areas to evaluate for potential RECs. The review may include aerial photographs, tax assessment records, historical maps, city directories, available building/water permits, and previous environmental reports prepared for the subject property. Amec Foster Wheeler intends to review property uses back to 1940, or to first developed use of the subject property as is reasonably ascertainable. As part of this review, Amec Foster Wheeler will be requesting that Client provide any commonly held information or knowledge about the subject property with regard to the history of the subject property and surrounding properties.

Amec Foster Wheeler Environment & Infrastructure, Inc.
8745 W. Higgins Road, Suite 300
Chicago, Illinois 60631
Phone: 773-693-6030
Fax: 773-693-6039
amecfw.com

- **Interviews:** Amec Foster Wheeler will attempt to interview individuals who are likely to have material information regarding the potential for contamination at the subject property. ASTM E1527-13 requires that the "User" provide contact information for such individuals. As such, Amec Foster Wheeler will be requesting that the User provide contact information for key subject property managers and other individuals, as available, including past and present owners and operators who are likely to have material information regarding the potential for contamination at the subject property.

- **Reconnaissance of the subject property and vicinity surrounding the subject property:** Amec Foster Wheeler will perform a physical reconnaissance of the subject property; observation of surrounding properties for unusual soil or surface colorations, physical irregularities, noticeable refuse piles, evidence of aboveground and underground fuel storage tanks; and, an evaluation of current land use on the subject property and in the immediate vicinity of the subject property.

  Review of federal, state, tribal, and local environmental records: Amec Foster Wheeler will conduct a review of files and published lists from selected local, state, and federal environmental regulatory agencies for records, lists, or other readily available sources of information. This review will be conducted to determine if the subject property or nearby properties are listed as having a known environmental issue, are under investigation, or are regulated by state or federal environmental regulatory agencies. In conducting this review, Amec Foster Wheeler will request a report from EDR, an independent data research company that provides specialized information on environmental records for individual properties. Amec Foster Wheeler will include an environmental lien search in the EDR requested scope.

  The ASTM standard for Phase I Environmental Site Assessments (ASTM 1527-13) includes a requirement for a lien search in the scope of work to determine if environmental liens are present on the property. The lien search cost per parcel is $185 (additional same owner parcels are $50 after the first parcel). Amec Foster Wheeler has included the cost to obtain one lien search. If it is determined that the property was split into other parcels in the past, additional lien searches may be required at additional cost. Amec Foster Wheeler will notify you for approval prior to initiating any additional lien searches.

  Amec Foster Wheeler will list regulated facilities within radii specified by ASTM E 1527-13. We will also review regulatory files for the subject property and adjacent properties if listed as regulated facilities and if the records are expected to provide valuable information with regard to the environmental status of the subject property. It should be noted that there can be additional time necessary to obtain such records; this should be accounted for in the overall schedule for completion of the Phase I ESA when possible. If not possible, Amec Foster Wheeler will note the data gap and follow up upon receipt if the content of the file would change the conclusions of the Phase I ESA report.

- **User Provided Information:** In order to complete the Phase I ESAs according to the USEPA's AAI Rule and ASTM Standard E1527-13, the User will be requested to provide the following information to Amec Foster Wheeler for the subject property:
    - **Identification of environmental liens or activity and use limitations associated with the subject property.**
    - **Consideration of purchase price vs. fair market value of the subject property.**
    - **Consideration of specialized knowledge.** Specialized knowledge that Client may have regarding the subject property or operations at the subject property must be considered. This would include inherent information that the User might have because of similar facilities it owns or operates or because of the type of work performed at the subject property.
    - **Consideration of commonly known information about the subject property.** Commonly known information about the subject property must be considered by both the User and Amec Foster Wheeler. Commonly known information could be identified through interviews, website information, newspaper articles, and other information commonly and publicly known about the subject property.
- **Review of published literature on the soils, geology, and hydrogeology in the vicinity of the subject property.**
- **Phase I ESA narrative report:** One Phase I ESA report will be prepared for the subject property. The Phase I ESA report will include vicinity and site-specific maps, discussion, findings, opinion, and conclusions. The report also will include a statement on the qualifications of the individuals at Amec Foster Wheeler who performed the Phase I ESAs as Environmental Professionals.

EXCLUSIONS

Our scope of work does not include:

- Asbestos-containing building materials;
- Radon;
- Lead-based paint;
- Lead in drinking water;
- Wetlands;
- Regulatory compliance;
- Cultural and historic resources;
- Industrial hygiene;
- Health and safety;
- Ecological resources;
- Endangered species;
- Indoor air quality;
- High-voltage power lines;
- Mold;
- Purchase price vs. fair market value evaluations; and
- Third-party lender requirements.

These services can be provided, if requested, under separate cover.

ASSUMPTIONS

Amec Foster Wheeler will perform this work using a one person for one day for the site visit. Site reconnaissance will consist of a combination of driving and walking where warranted.

LIMITATIONS

A Phase I ESA does not guarantee an environmentally "clean" site, but rather gives a preliminary indication whether further environmental work may be needed by utilizing available data on the area.

Additionally, it should be noted that completion of an ASTM E1527-13 standard Phase I ESA does not provide full CERCLA liability protection. Under the AAI Rule, the entity seeking one of the CERCLA liability protections also must meet continuing obligations as defined in the 2002 Brownfields Amendments.

This report will be prepared for the exclusive use of Client. Any use which a third party might make of the report, or any reliance on or decisions that may be made based on it, will be the responsibility of the third party. Should additional parties request reliance on our report, written authorization from Amec Foster Wheeler will be required. With respect to third parties, Amec Foster Wheeler will have no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

Our report will be based on data and information collected during the Phase I ESA on the date of the site visit, supplemented by a review of historical information and data obtained by Amec Foster Wheeler as described in the report. Except as otherwise specified, Amec Foster Wheeler will disclaim any obligation to update our report for events taking place, or with respect to information that becomes available to Amec Foster Wheeler after the time during which Amec Foster Wheeler conducted the Phase I ESA. In evaluating the property, Amec Foster Wheeler will be relying in good faith on information provided by other individuals. Amec Foster Wheeler will assume that the information provided is factual and accurate. In addition, the findings in our report will be based, to a large degree, upon information provided by the current owner/occupant. Amec Foster Wheeler accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

Amec Foster Wheeler will make no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in our Phase I ESA, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

COST ESTIMATE

Grant and Richmond Flood Damage Mitigation Alternatives Investigation

		RAW TASK $ TOTAL	TOTAL HOURS
	TASK A: DATA COLLECTION		
A.1	Collect and Review Available Mapping	$1,963.50	51.50
A.2	Collect and Review Sewer Atlases and As-Built Drawings	$717.00	17.00
A.3	Collect and Review Studies and Associated Hydrologic & Hydraulic (H&H) Models	$3,208.00	68.00
A.4	Collect and Review Historic Flooding Data	$1,514.00	34.00
A.5	Collect Precipitation Data	$135.50	3.00
A.6	Collect Supplemental Field Survey Data (AMEC hours only, see sub cost below)	$861.00	21.00
A.7	Perform Storm Sewer Condition Investigation (AMEC hours only, see sub cost below)	$283.00	6.50
A.8	Perform Geotechnical Investigation (AMEC hours only, see sub cost below)	$642.50	12.50
A.9	Perform Phase I Environmental Site Assessment	$1,039.00	35.00
	TASK B: ANALYSIS OF EXISTING CONDITIONS		
B.1	Bench Test Existing H&H Model(s)	$419.00	9.00
B.2	Construct /Update Existing Condition H&H Model(s)	$2,044.00	44.00
B.3	Run Existing Condition H&H Model (debug and calibrate)	$1,432.00	32.00
B.4	Flooding Problem Characterization	$958.00	23.00
	TASK C: ANALYSIS OF ALTERNATIVES		
C.1	Definition of Project Goals	$334.00	7.50
C.2	Definition of Alternatives	$2,055.00	44.00
C.3	Construct / Update Proposed Alternatives H&H Model(s)	$2,106.00	46.00
C.4	Run Proposed Altrnative Condition H&H Model(s)	$1,638.00	38.00
C.5	Prepare Construction Cost Estimates	$1,846.00	34.50
	TASK D: PREPARATION OF PROJECT REPORT		
D	Prepare Draft Report	$3,457.00	72.00
D	Prepare Final Report	$1,694.00	36.00
	TASK E: PROJECT MANAGEMENT AND COORDINATION		
E	Weekly Project Progress Reports to Client, Client Coordination PM Tool Management	$3,544.00	72.00
E	Project Progress & Coordination Meetings (1 kickoff/field, 3 progress, 3 sub coord)	$2,037.00	39.00
E	Stakeholder Meeting (prep and 1 meeting/presentation)	$798.00	18.00
E	Board Meetings (attendance at 2 meetings)	$648.00	12.00
	TOTAL	$35,499.50	775.50

DIRECT COSTS & SUBCONSULTANTS

Lin Engineering (Field Survey subconsultant)	$9,956.63
Visu-Sewer (Storm System Televising subconsultant)	$9,875.00
Geo Services (Geotechnical subconsultant)	$24,120.00
Amec Foster Wheeler travel cost (@54 cents/mile)	$234.86
tolls	$0.00
hotels/meals	$0.00
Envrionmental Data Resources (EDR) database review for Phase I Environmental Assessment	$495.00
Shipping	$50.00
reproduction costs (hardcopy prints/plot/exhibitss, CDs, DVDs)	$500.00
Direct Cost Markup Factor	1.00
DIRECT COST TOTAL	**$45,231.49**

PROJECT TOTAL COST

Raw Labor=	$35,499.50
OH&P Multiplier=	2.80
Labor Revenue (raw x mult)=	$99,398.60
Direct Costs & Subs=	$45,231.49
PROJECT TOTAL =	**$144,630.09**